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09/595,561	06/16/2000	Anand G. Dabak	TI 29347	1123

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EXAMINER

CHANG, EDITH M

ART UNIT

PAPER NUMBER

2634

DATE MAILED: 11/19/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/595,561

Applicant(s)

DABAK ET AL.

Examiner

Edith M Chang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 June 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-49 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-49 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 1,4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-5, 8, 11, 14-18, 21-22, 24-31, 34, 36, 39-43, 46-47, & 49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Terasawa et al. (US 6385264) in view of UMTS FDD version 3.2.0 and TSG-RAN WG1 meeting #5 XP-002244434.

Regarding **claims 1 & 27**, except explicitly specify the secondary synchronization code in response to a third sequence, Terasawa et al. discloses all subject matter claimed: a wireless communication system and its methods (Abstract), it comprises: transmitter circuitry (FIG.2) comprising encoder circuitry for transmitting a plurality of frames (FIG.1 & FIG.2, column 5 lines 18-21); wherein each of the plurality of frames comprises a primary synchronization code (PSC) and a secondary synchronization code (SCC) (FIG.1, c_p is the primary synchronization code, c_s is the secondary synchronization code); and wherein the encoder circuitry comprises: circuitry for providing the primary synchronization code in response to a first sequence (202-206-208 FIG.2, column 3 lines 1-10); and circuitry for providing the secondary synchronization code in response to a second sequence (204-212 FIG.2); wherein the second sequence is selected from a plurality of sequences, wherein each of the plurality of sequences is orthogonal with respect to all other sequences in the plurality of

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sequences (column 2 lines 17-22). However the UMTS FDD and TSG-RAN WG1 meeting #5 define the secondary synchronization code constructed from a Hadamard sequences and a sequence z/Generalized Hierarchical Golay sequence PSC (UMTS FDD version 3.2.0 page 21-22, TSG-RAN WG1 meeting #5 XP-002244434 figure (2)). At the time of the invention, it would have been obvious to a person of ordinary skill in the art to implement the SCC generator as the figure (2) discloses by UMTS in Terasawa et al.'s SCC generator to generate the SCC having the third sequence comprising a subset of bits from the first sequence to be compatible to the UMTS specification for interoperability.

Regarding **claims 2-3, & 28-29** further the TSG-RAN WG1 meeting #5 XP-002244434 discloses that the first sequence comprises a hierarchical Golay sequence; refer to the rejection of claim 1.

Regarding **claims 4, 15, 18, 22, 30, 40, 43, & 47**, Terasawa et al. discloses the second sequence comprising a plurality of code words (FIG.1); and each of the plurality of code words is selected from a plurality of Hadamard sequences (column 2 lines 17-30) and stated in the UMTS specifications, refer to the rejection of claim 1.

Regarding **claims 5 & 31**, Terasawa et al. discloses the second sequence consists of fifteen of the code words (FIG.1).

Regarding **claims 8 & 34**, Terasawa et al. discloses the second sequence consists of sixteen of the code words (FIG.1).

Regarding **claims 11, 14, 16-17, 21, 36, 39, 41-42 & 46**, the modified circuitry and its methods stated in the rejection of claim1 for providing the secondary synchronization code comprises: circuitry for performing an exclusive OR operation between the second sequence and

the third sequence; and circuitry for providing the secondary synchronization code in response to the exclusive OR operation (figure (2) TSG-RAN WG1 meeting #5 XP-002244434).

Regarding **claim 24**, Terasawa et al. discloses the transmitter comprising a CDMA Transmitter (Abstract, the base stations).

Regarding **claims 25-26 & 49**, further the modified SCC generator in the rejection of claim 1 comprising the circuitry for storing the code derived from an exclusive OR operation between the second and third sequences (figure (2) TSG-RAN WG1 meeting #5 XP-002244434; FIG.2, column 6 lines 61-column 7 line 9 '264). At the time of the invention, it would have been obvious to a person of ordinary skill in the art to have the circuitry stated in UMTS specifications in Terasawa et al.'s SCC generator for storing the secondary synchronization code for further processing such as the combining and modulation (214 FIG.2).

3. Claims 6-7, 9-10, 12-13, 19-20, 23, 32-33, 35, 37-38, 44-45, & 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Terasawa et al. (US 6385264) in view of UMTS FDD version 3.2.0 and TSG-RAN WG1 meeting #5 XP-002244434, further in view of Popovic' (US 6567482 B1) and Nystrom et al. (US 6526091 B1 referenced and included by Popovic').

Regarding **claims 6, 9 & 32**, further Popovic' teaches the plurality of Hadamard sequences are selected from a set of 256 Walsh sequences (column 19 line 65-column 20 line 15). At the time of the invention, it would have been obvious to a person of ordinary skill in the art to have the Popvic's teachings in Terasawa et al.'s SSC generator to generate the SSC for efficient synchronization (Abstract '482).

Regarding **claims 7, 19, 23, 33, & 48**, Terasawa et al. discloses the SCH comprising sixteen code words (column 2 lines 15-30), further both Popovic' and Nystrom et al. teach the

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256 Walsh sequences have a defined order (column 20 lines 26-45 '482; column 10 lines 30-35 '091); and wherein the plurality of Hadamard sequences comprise sixteen Hadamard sequences selected as every sixteenth sequence in the defined order (column 9 lines 30-40 '091 wherein the every sixteenth sequence for the sixteen time slots). At the time of the invention, it would have been obvious to a person of ordinary skill in the art to have the Popvic' and Nystrom et al.'s teachings in Terasawa et al.'s SSC generator to generate the SSC for efficient synchronization (Abstract '482).

Regarding **claims 10, 19, 35, &, 44**, Terasawa et al. discloses the 256 Walsh sequences have a defined order; and wherein the plurality of Hadamard sequences comprise seventeen Hadamard Sequences (column 2 lines 5-30), further Popovic' teaches selecting as every eighth sequence in the defined order (column 21 line 20-column 22 line 20, TABLE 5). At the time of the invention, it would have been obvious to a person of ordinary skill in the art to have the Popvic's teaching in Terasawa et al.'s SSC generator to generate the SSC for superior performance in term of MAS (column 21 lines 1-6 '482).

Regarding **claims 12-13, 20, 37-38, & 45**, further Popovic' teaches the composing the PSC/Golay complementary sequences with an arbitrary number of +1 and -1 W_n (column 10 lines 10-60) to provide a complete Golay sequences of length 256 chips (column 20 lines 30-40) that cover the invention specified in the claims (different permutations/combinations). At the time of the invention, it would have been obvious to a person of ordinary skill in the art to have the Pop Vic's teachings in Terasawa et al.'s PSC generator to generate the PSC for efficient synchronization (Abstract '482).

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Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edith M Chang whose telephone number is 703-305-3416. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 703-305-4714. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4800.

Edith Chang
November 12, 2003


STEPHEN CHIN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600